

## **REMARKS**

Favorable reconsideration of this application and the Office Action of June 3, 2009 are respectfully requested in view of the foregoing amendments and the following remarks.

Filed concurrently herewith is a one-month Extension of Time Request and requisite fee to extend the deadline for response to October 3, 2009.

Claims 1, 3-5, 7-9 and 12-14 remain in this application as amended. Claim 5 has been amended in this response to clarify the claim to be consistent with claim 1.

The rejection of claims 1-14 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement as claiming subject matter not described in the specification is respectfully traversed. It is respectfully submitted that a complete understanding of Applicant's disclosure demonstrates that the claims are properly supported by the written description.

Contrary to the contention of the PTO in the Office Action the written description in Applicant's specification provides a detailed explanation of the diffusion of adhesive molecules into the photoresist layer that results in a chemical reaction leading to cross-linking of No. US20060024619. As can be taken from these sections, the conclusion of the PTO that the cross-linking is due to exposure is incorrect. Diffusion leads to a gradient, as recognized by the PTO in the Office Action; however, the PTO fails to recognize that the adhesive molecules can lead to the cross-linking reaction. Accordingly, it is respectfully submitted that the written description requirement of 35 U.S.C. 112, first paragraph, is met by the disclosure in the specification and, therefore, the PTO is respectfully requested to reconsider and withdraw this Section 112 rejection of claims 1-14.

The rejection of claims 1, 3-5, and 12-14 under 35 U.S.C. 102(a) as being anticipated by WO 02/09103 (Hendriks et al.) is respectfully traversed.

In the present claimed invention the master plate is characterized by a solubility gradient normal to the photoresist layer wherein the solubility on the side near the substrate being less than the solubility on the opposite, upper side of the photoresist. This results from the diffusion/reaction discussed hereinbefore.

As a consequence of the discussion hereinbefore with respect to the Section 112 rejection, since the claimed invention in the present application leads to a chemical reaction resulting in the afore-mentioned cross-linking, the disclosure of Hendriks et al. as set forth in paragraph 6 of the Office Action cannot disclose or even teach the subject matter of Applicant's claimed invention of a master plate with such a solubility gradient. In contrast to the present invention. Hendriks et al. teach that the cross-linking is realized by deep UV light and a heat treatment, not by a chemical reaction. Hendriks et al's process does not produce the solubility gradient of Applicant's invention. On page 5 of the Office Action the PTO contends that the Hendriks et al. substrate is in particular suitable for use in a method for manufacturing a stamper. However, that substrate is less suited for making a stamper since it creates pits instead of bumps which are required for stampers to produce optical media. In case there is any solubility of the first layer, this solubility will be **uniform (not a gradient)** for this layer since the curing by heat treatment and UV light will lead to uniform curing given the thickness of this undercoat described by Hendriks et al.

The just mentioned argument of the PTO in the Action appears to be based on the fact that in the present application previously an embodiment having two layers of photoresist was claimed. However, as to pending claim 1 those arguments of the PTO are additionally irrelevant.

Additionally, the PTO's statement in the last sentence of the first paragraph on page 7 of the Action has no relevance since the embodiment in Applicant's Figure 3b is no longer claimed.

Furthermore, as correctly acknowledged by the PTO in the Action, Hendrik et al. refers to a "monolayer" (which would be a layer of one nanometer or less) of adhesive. This,

however, is in contrast to the adhesive layer according to Applicant's claimed invention which is a relatively thick layer of about 30-40 nanometers as mentioned in paragraph [0015]. This 30-40 thick layer is much thicker than a monolayer

The disclosure in the Hendricks et al. document relates to a different problem and different device. The Hendricks et al. document is about making a stamper, whereas the present claimed invention relates to a master plate and a method of fabricating a master plate. In addition to all Applicant's foregoing patentability argument this alone shows that the claimed invention is novel.

For at least these reasons the rejection of claims 1,3-5 and 12-14 as anticipated under 35 U.S.C. 102 by Hendricks et al. is erroneous and, therefore, the PTO is respectfully requested to reconsider and withdraw this rejection of those claims.

The Section 103 rejections of claims 1, 3-5 and 12-14 over Hendricks et al. in view of Kondo et al. (JP 10-031848), the rejection of claims 1, 3, 4 and 7 over Hendricks et al. in view of Peterson et al. (US 5702767) and claims 1, 3, 4, and 7-9 over those references further in view of Thompson (US 6361921) are respectfully traversed. **None of these three secondary references cures the deficiencies of the Hendricks et al. disclosure as discussed hereinbefore.** Therefore, it is respectfully submitted that the combinations of Hendricks et al. with either Kondo et al. or Petersen et al. alone or with Petersen and Thompson do not render the invention obvious to one skilled in the art.

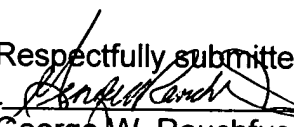
Furthermore, if one were to attempt to use the substrate of the present invention to solve the problem addressed in the Hendricks et al. document one would not reach the effect that the height of the posts is well defined. In addition, the effect would be that the area between the posts is not flat.

Furthermore, the two layers disclosed in Hendricks et al. are obtained by the photoresist layers in two steps. This is in direct contrast to the invention of the present application claims that require that a single photoresist is provided thereon. These

deficiencies are not cured by any disclosure in the cited references and, therefore, the claimed invention is both novel and unobvious to one skilled in the art.

Therefore, the USPTO is respectfully requested to reconsider and withdraw the 35 U.S.C. Section 103 rejections of claims 1, 3-5 and 12-14 over Hendriks et al. in view of Kondo et al. (JP 10-031848), the rejection of claims 1, 3, 4 and 7 over Hendriks et al. in view of Peterson et al. (US 5702767) and claims 1, 3, 4, and 7-9 over those references further in view of Thompson (US 6361921)

It is respectfully submitted that this is a full and complete response to the Office Action of June 3, 2009 and that all the claims are allowable for at least the reasons stated. An early indication of their allowability by issuance of a Notice of Allowance is earnestly solicited.

Respectfully submitted,  
By:   
George W. Rauchfuss, Jr.  
Reg. No. 24,459  
Attorney for Applicant

Ohlandt, Greeley, Ruggiero & Perle, L.L.P.  
One Landmark Square, Tenth Floor  
Stamford, CT 06901-2682  
Tel: (203) 327-4500; Fax: (203) 327-6401  
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